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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,791	06/26/2003	Warren B. Jackson	200207604-1	6884

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EXAMINER

WARREN, MATTHEW E

ART UNIT PAPER NUMBER

2815

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/608,791

Applicant(s)

JACKSON ET AL.

Examiner

Matthew E. Warren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This Office Action is in response to the Remarks filed on January 9, 2006.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Stasiak (US Pub. 2003/0230746 A1).

In re claim 1, Stasiak shows (figs. 1a-1b) an organic polymer based memory element comprising two overlapping conductive signal lines (140 and 130) and at least one organic polymer layer (120) within the region of overlap between the two signal lines, the organic polymer layer having at least two detectable memory states [0019], transitions between which arise from one of changes in chemical bonds and changes in organic polymer doping [0023].

Claims 1-27, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Krieger et al. (US Pub. 2004/0246768 A1).

In re claim 1, Krieger et al. shows (figs. 1-6) an organic polymer based memory element comprising two overlapping conductive signal lines (upper electrode and lower electrodes 1 and 2) and at least one organic polymer layer (active layer 3) within the region of overlap between the two signal lines [0019], the organic polymer layer having at least two detectable memory states, transitions between which arise from one of changes in chemical bonds and changes in organic polymer doping [0019].

In re claim 2, Krieger discloses [0019] that in the first memory state, the organic polymer exhibits a first electrical resistivity, in the second memory state, the organic polymer exhibits a second electrical resistivity lower than the first, and the element is inherently an antifuse type memory element.

In re claim 3, Krieger discloses [0019] that the memory-state transition is initiated by applying to the memory element state-transition facilitating agents such as electrical voltage.

In re claims 4-13, Krieger shows [fig. 5] that the organic polymer layer is adjacent an additional layer (passive layer 5). The organic polymer layer and additional layer inherently have all of the memory-state transition properties of the claims because the structure and materials are the same as those of the claimed invention.

In re claim 14, Krieger discloses [0019] that in the first memory state, the organic polymer exhibits a first electrical resistivity, in the second memory state, the organic polymer exhibits a second electrical resistivity higher than the first, and the element is inherently a fuse type memory element.

In re claim 15, Krieger discloses [0019] that the memory-state transition is initiated by applying to the memory element state-transition facilitating agents such as electrical voltage.

In re claims 16-25, Krieger shows [fig. 5] that the organic polymer layer is adjacent an additional layer (passive layer 5). The organic polymer layer and additional layer inherently have all of the memory-state transition properties of the claims because the structure and materials are the same as those of the claimed invention.

In re claims 26 and 27, Krieger discloses that upon application of a switch, the memory element irreversibly transitions from the first memory state to the second memory state [0045] or reversibly transitions from the first memory state to a second memory state and back to the first memory state with a second switch [0050] since a switching means is inherently used to turn the voltage on or off.

In re claims 32, Krieger discloses [0002] that the invention pertains to a computer system comprising a processor and memory having a number of memory elements.

Claims 1-3, 14, 15, and 28-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Chow (US 6,646,903 B2).

In re claim 1, Chow shows (fig. 1) an organic polymer based memory element comprising two overlapping conductive signal lines (upper electrode and lower electrodes 20 and 22) and at least one organic polymer layer (active layer 16) within the region of overlap between the two signal lines, the organic polymer layer having at least

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two detectable memory states, transitions between which arise from one of changes in chemical bonds and changes in organic polymer doping (col. 2, lines 11-25).

In re claim 2, Chow discloses (col. 2, lines 11-25) that in the first memory state, the organic polymer exhibits a first electrical resistivity, in the second memory state, the organic polymer exhibits a second electrical resistivity lower than the first, and the element is inherently an antifuse type memory element.

In re claim 3, Chow discloses (col. 2, lines 35-58) that the memory-state transition is initiated by applying to the memory element state-transition facilitating agents such as electrical voltage.

In re claim 14, Chow discloses (col. 2, lines 11-25) that in the first memory state, the organic polymer exhibits a first electrical resistivity, in the second memory state, the organic polymer exhibits a second electrical resistivity higher than the first, and the element is inherently a fuse type memory element.

In re claim 15, Chow discloses (col. 2, lines 35-58) that the memory-state transition is initiated by applying to the memory element state-transition facilitating agents such as electrical voltage.

In re claims 28-32, Chow discloses (col. 1, lines 28-50) that the memory elements form a two-dimensional array or a three dimensional array for switching between memory states to store data values. The memory cell is used in a computer system having a processor.

***Response to Arguments***

Applicant's arguments filed with respect to the Declaration of July 20, 2005 have been fully considered but they are not persuasive. The applicant primarily argues that evidence presented should be sufficient enough to overcome the Stasiak (US Pub. 2003/0230746 A1) reference. Again, the examiner believes that the evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the Stasiak reference to either a constructive reduction to practice or an actual reduction to practice. The evidence submitted only discloses the chemical composition of and process of making polymers, which has nothing to do with the claimed invention. There is nothing in the evidence that suggests diligence in making an organic-polymer based memory element comprising two overlapping conductive signal lines, which is the claimed invention. Nothing in the evidence shows that the organic polymer layer has at least two detectable memory states. So, one of ordinary skill in the art would not be able to ascertain that the evidence submitted pertains to an a memory element. The only discernable information that can be obtained from the declaration is that the applicant invented an organic polymer, which could be used in anything (such as the insulating layer of a printed circuit board).

The evidence submitted is insufficient to establish a reduction to practice of the invention in this country or a NAFTA or WTO member country prior to the effective date of the Stasiak reference. As stated before, there is nothing in the evidence that suggests reduction to practice of an organic-polymer based memory element comprising two overlapping conductive signal lines, which is the claimed invention. The

applicant's Affidavit has not overcome Stasiak or the newly cited reference of Krieger for that matter.

Applicant's arguments filed with respect to the Declaration of July 20, 2005 have been fully considered but they are not persuasive. The applicant primarily argues that the prior art references of Stasiak and Krieger do not show all of the elements of the claims. The examiner believes that the prior art reference show all of the elements of the claims. As for Stasiak, since he discloses that the memory device is formed of organic polymers that are also doped, then transitions between detectable memory states will also arise from changes in chemical bonds or organic-polymer doping. Stasiak has the same structure and materials as the applicant's claimed invention, so therefore it would inherently operate in the same manner as the applicant's claimed invention. As for Krieger, the same logic applies. There is nothing in the claims that structurally differentiates the claimed invention from any of the cited references. Those references will also operate in the same manner as the claimed invention. For this reason, the references show all of the elements of the claims and this action is made final.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within



TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (571) 272-1737. The examiner can normally be reached on Mon-Thur and alternating Fri 9:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MEW  
*MEW*  
March 20, 2006

  
KENNETH PARKER  
SUPERVISORY PATENT EXAMINER